



# **Armed Forces College of Medicine**

## **AFCM**



lateral  
**Lateral side of leg and  
dorsum of foot** •

**Ass. Professor Dr . Hussein  
Mohamed**

# INTENDED LEARNING OBJECTIVES (ILO)



By the end of this lecture the student will be able to:

- Describe the attachments, action and nerve supply of muscles of lateral side of leg and dorsum of foot
- Define attachment and structures passing behind peroneal retinacula
- Describe root value, origin, course and branches of superficial peroneal nerve
- State beginning, course and branches of dorsalis pedis artery& its clinical significance

# Lecture Plan

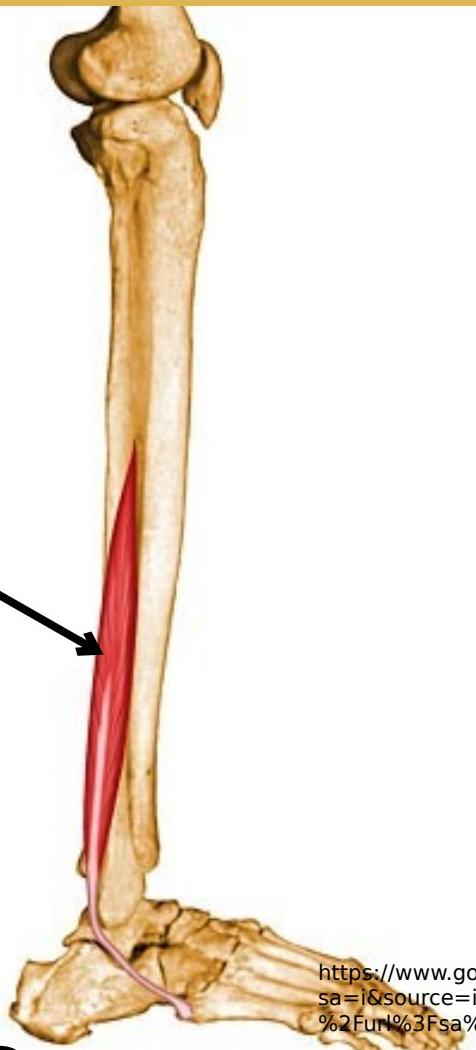


1. Part 1 : lateral compartment of leg, pernous longus and bervis ,superficial peroneal nerve ,Peroneal retinacula & Dorsum of foot
2. Summary
3. Quiz

# **lateral compartment muscles :Peroneal muscles**



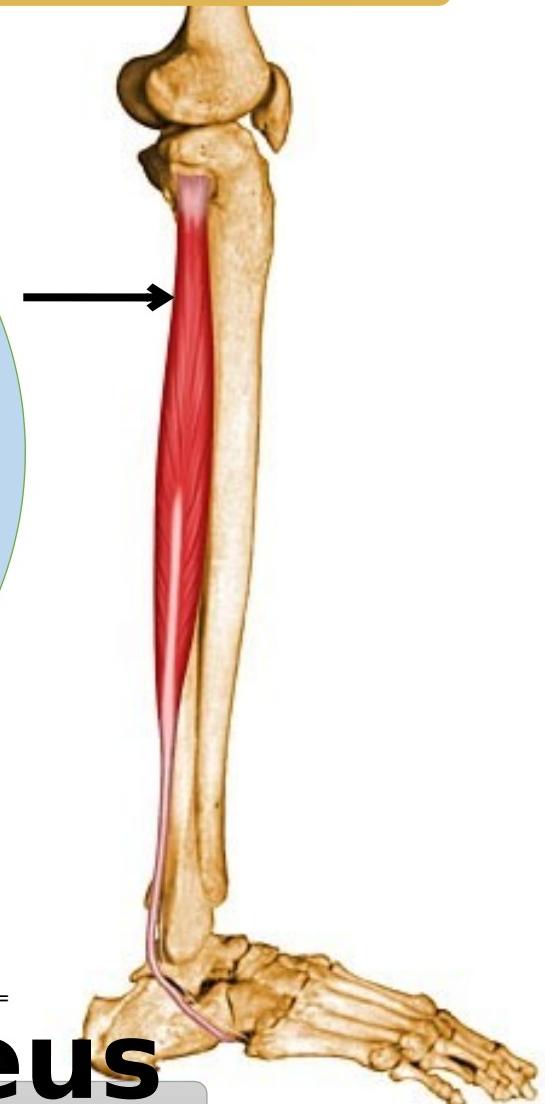
**From  
the  
lower  
2/3 of  
the  
lateral  
side of  
the  
fibula**



**Peroneus  
brevis**

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sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiOqJ6q5KjiAhXBK1AKHb3PALcQjRx6BAgBEAQ&url=%2Furl%3Fsa%3Di&source%3Dimages%26cd%30](https://www.google.com/url?sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiOqJ6q5KjiAhXBK1AKHb3PALcQjRx6BAgBEAQ&url=%2Furl%3Fsa%3Di&source%3Dimages%26cd%30)

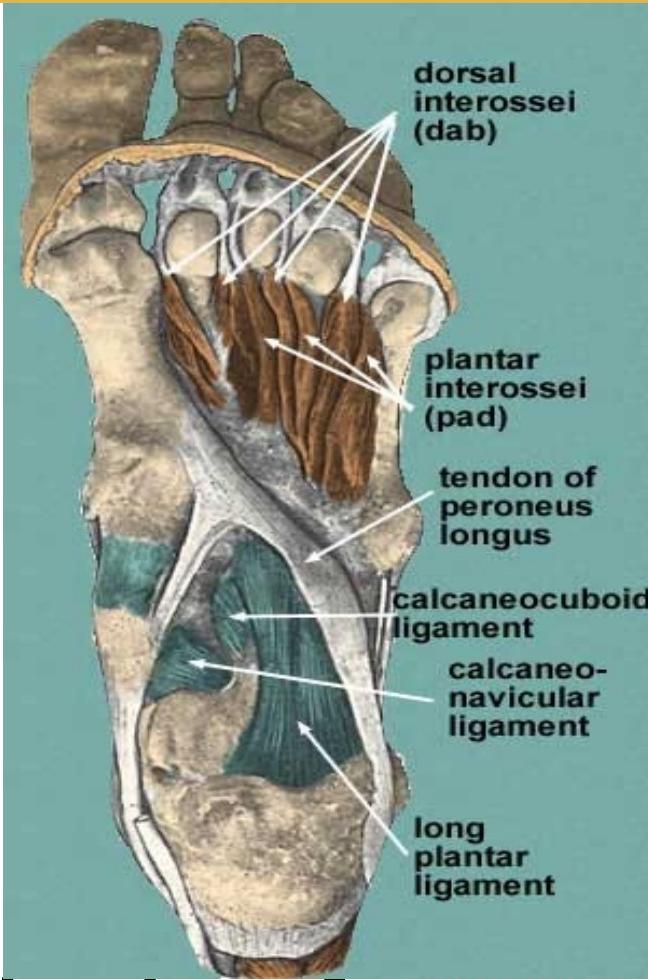
**From the  
lateral  
side of the  
head of  
fibula  
+upper  
2/3 of the  
lateral  
surface of  
fibula**



**Peroneus  
longus**



# Peroneal muscles



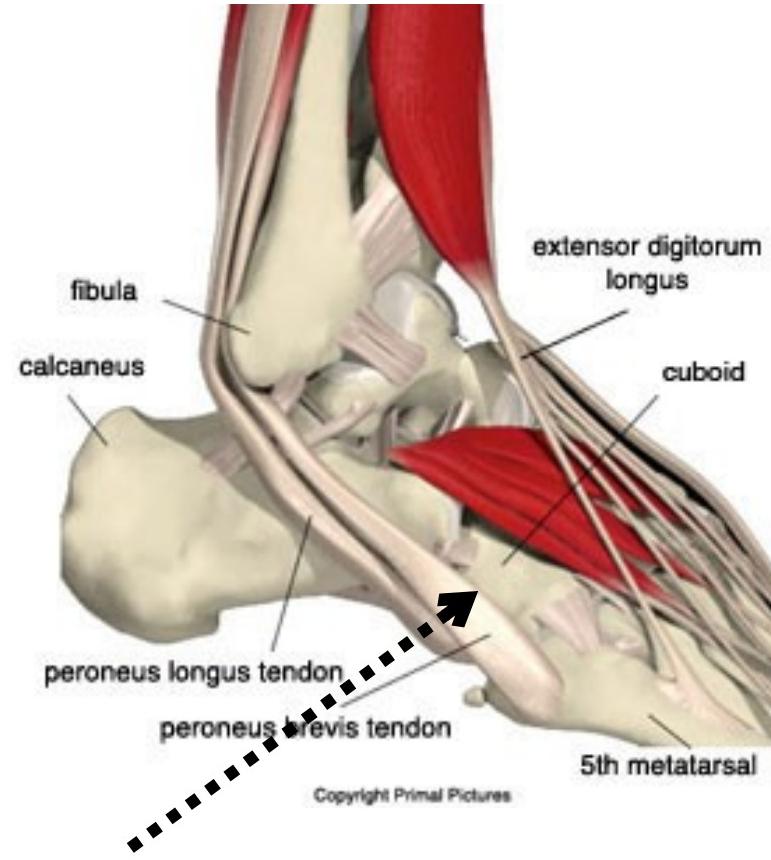
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sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiwpx46jiAhXBaIAKHWzgBGsQjRx6B](https://www.google.com/url?sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiwpx46jiAhXBaIAKHWzgBGsQjRx6B)

The tendon of **peroneus longus** inserted into the planter surface of the base of the **1<sup>st</sup> metatarsal bone** and **medial cuneiform bone**.



# Peroneal muscles



**The tendon of peroneus brevis inserted into the lateral side of the base of the 5<sup>th</sup> metatarsal bone .**

Musculoskeletal & Integumentary Module

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sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiwpayx46jiAhXBaIAKHWzgBGsQjRx6B](https://www.google.com/url?sa=i&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwiwpayx46jiAhXBaIAKHWzgBGsQjRx6B)

# Action of Peroneal muscles



**peroneus longus and brevis evert foot**

**peroneus longus supports the arches of foot**  
**peroneus brevis prevents over inversion**



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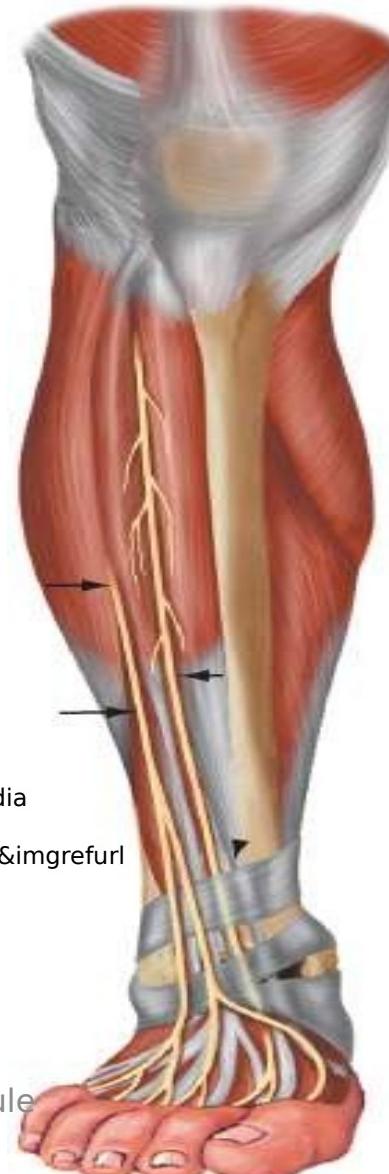
# Superficial peroneal nerve



❖ One of the two terminal branches of the **common peroneal nerve**.

❖ Begin at the lateral side of the neck of fibula and ends in the distal part of the leg by **dividing into medial and lateral branches**.

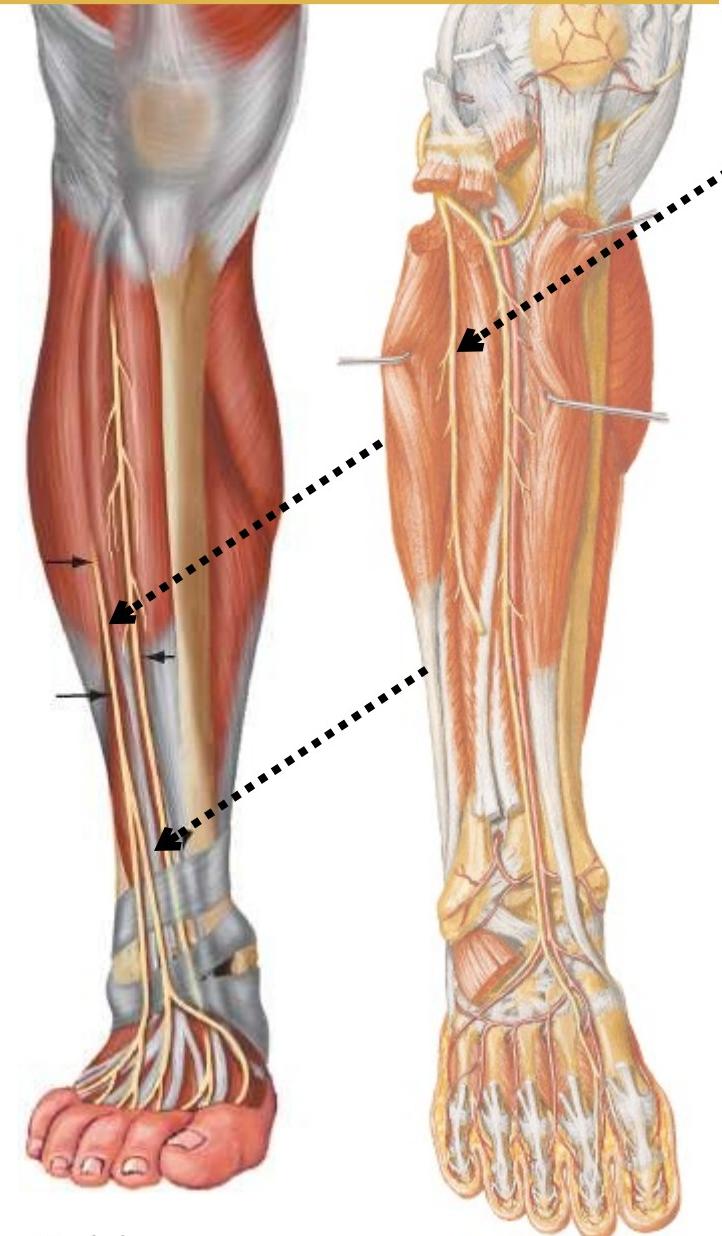
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# Superficial peroneal nerve

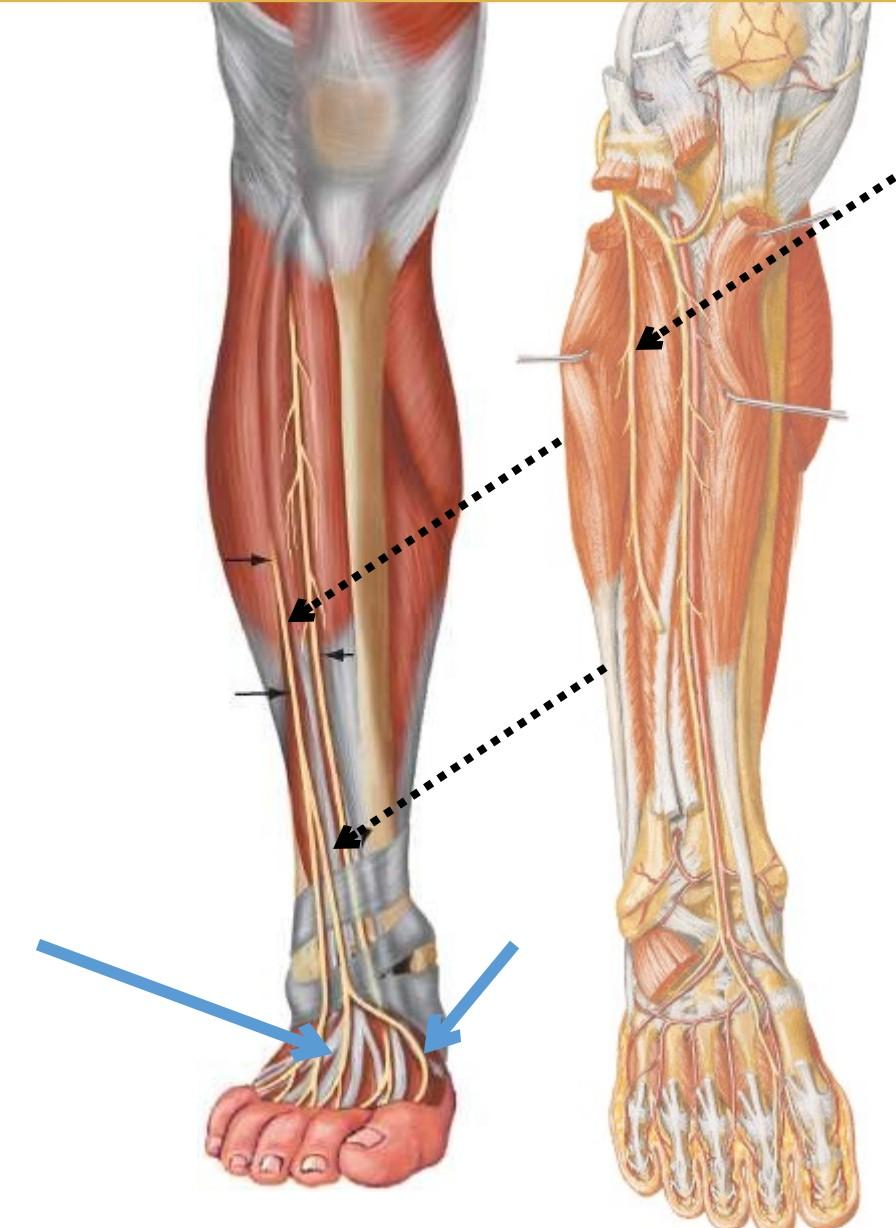
- ❖ **Upper 1/3** of the leg
  - .....in the substance of peroneus longus.
- ❖ **Middle 1/3**
  - .....between peroneus longus & brevis .
- ❖ **Lower 1/3** .....emerges between the 2 muscles & pierce the deep fascia and divide into medial and lateral terminal branches



# Branches of Superficial peroneal nerve



- ❖ Muscular
- ❖ Cutaneous to  
Skin of lower lateral side of  
leg and intermediate area  
of dorsum of foot
- ❖ Medial side of big toe
- ❖ Adjacent sides of  
2 and 3<sup>rd</sup> toes  
3 and 4<sup>th</sup> toes  
4 and 5<sup>th</sup> toes





# Peroneal retinaculum

## Superior peroneal retinaculum :

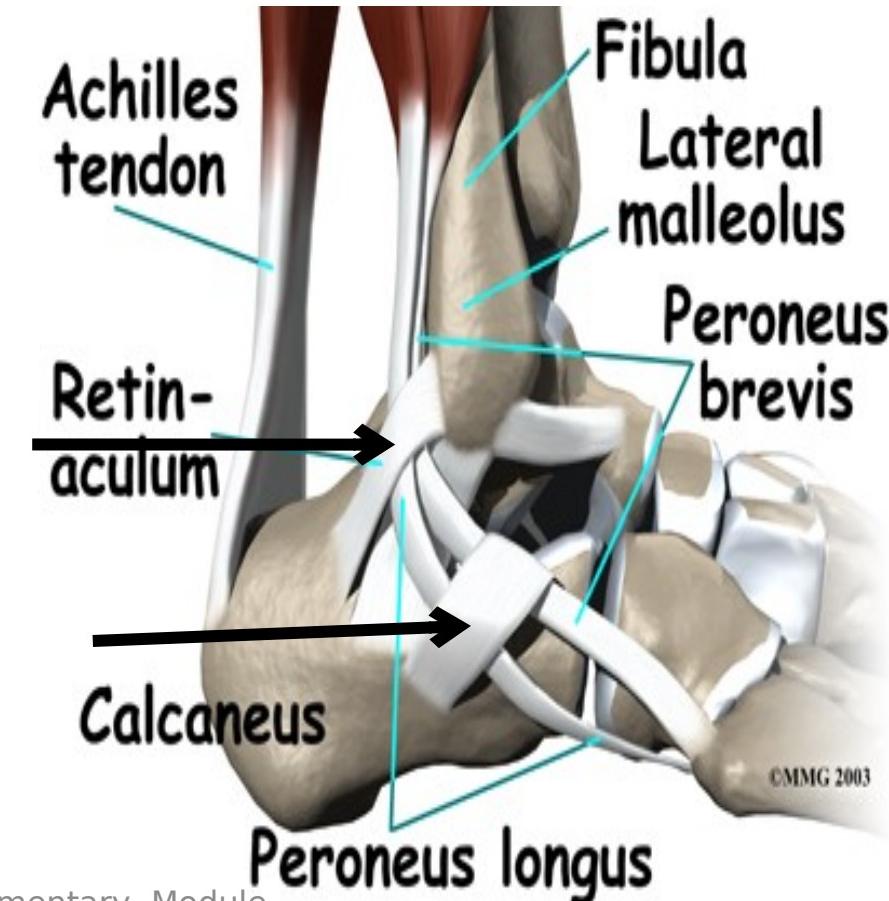
Extends from back of lateral malleolus to lateral aspect of calcaneus

Has a single compartment.

## Inferior peroneal retinaculum :

Extends from superior to lateral surface of calcaneus.

Has two compartments



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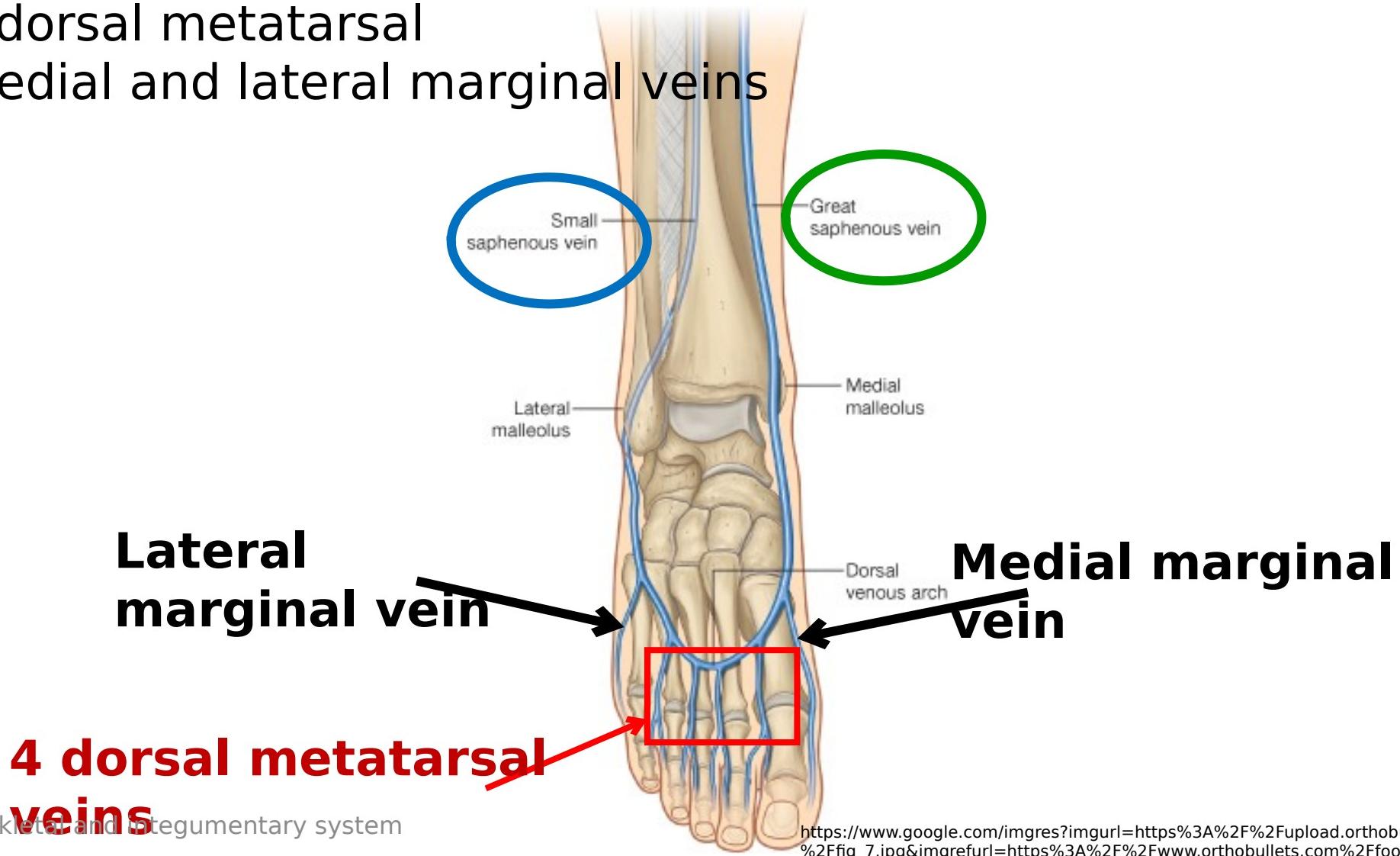


# Dorsal venous arch

Lies at level of proximal metatarsal

Receives 4 dorsal metatarsal

Receives medial and lateral marginal veins



# Extensor digitorum brevis

## Origin :

From upper surface of calcaneus & stem of inferior extensor retinaculum

## Insertion :

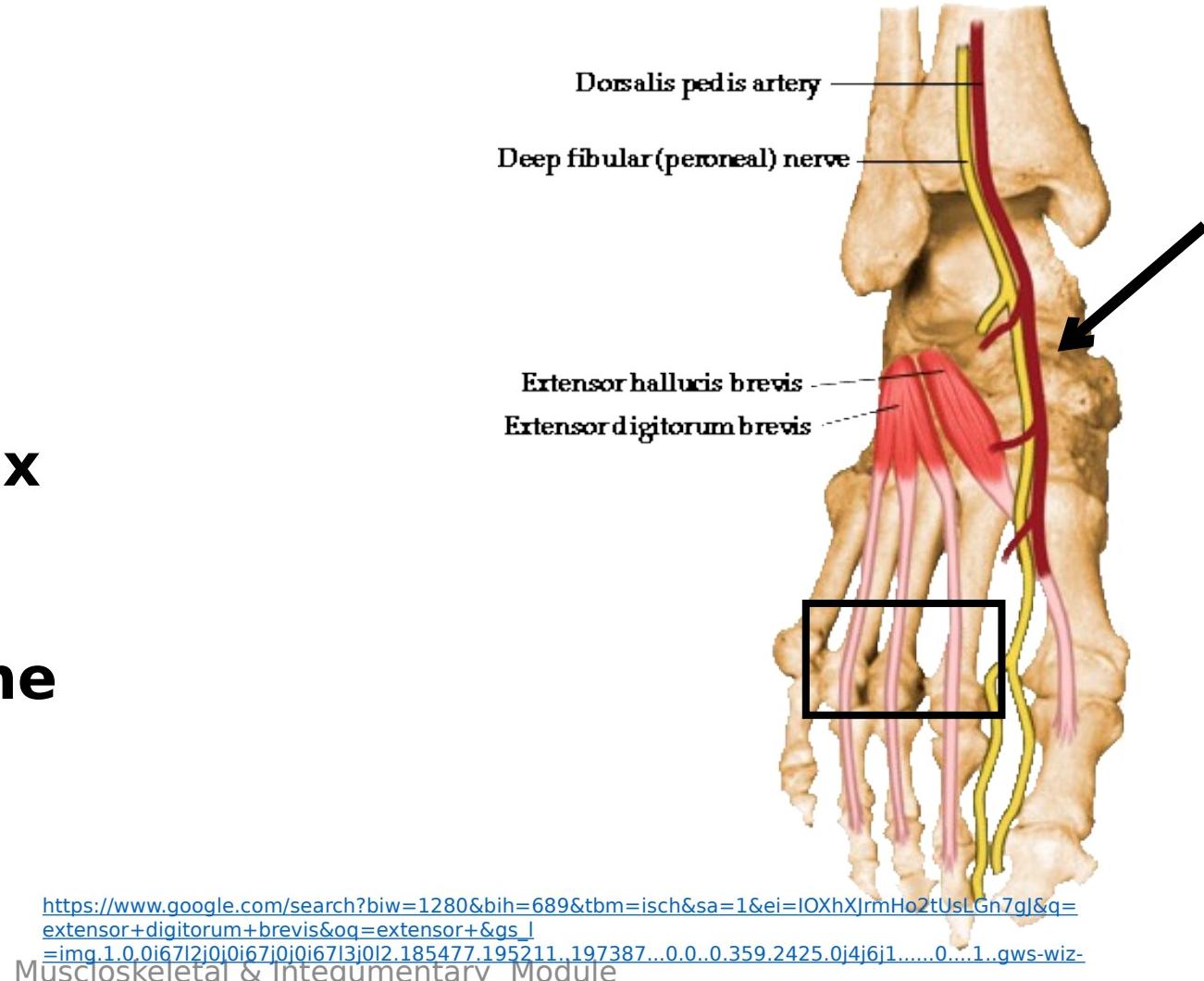
By 4 tendons into the medial 4 toes.

One for proximal phalanx of big toe...extensor hallucis brevis

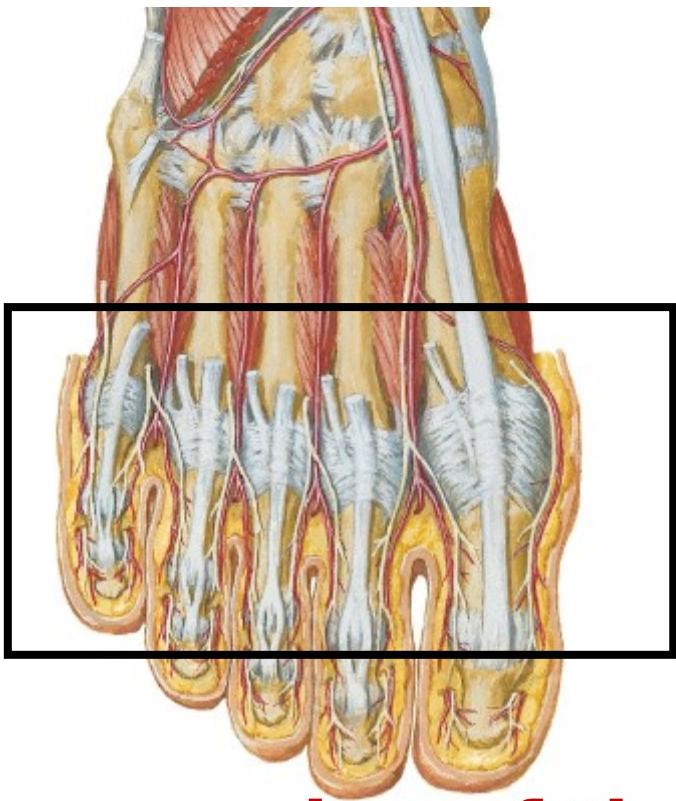
Lateral 3 tendons join the extensor expansion

## Nerve supply :

Deep peroneal nerve



# Extensor expansion



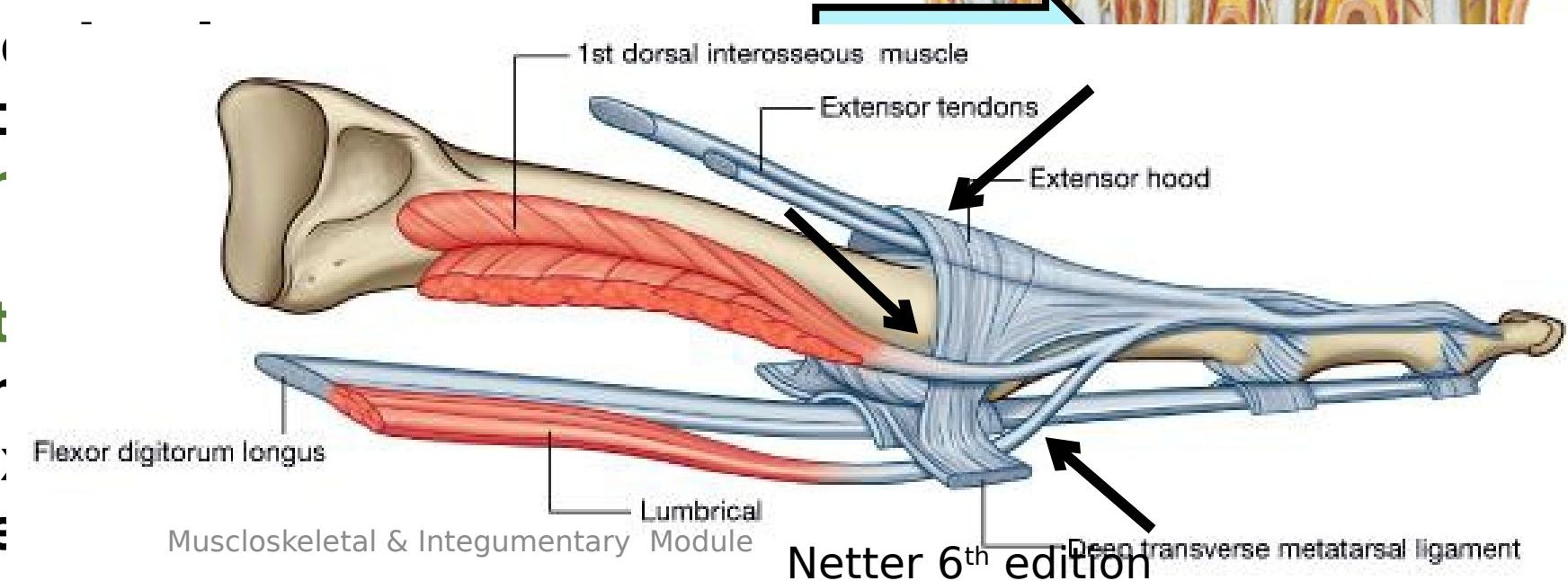
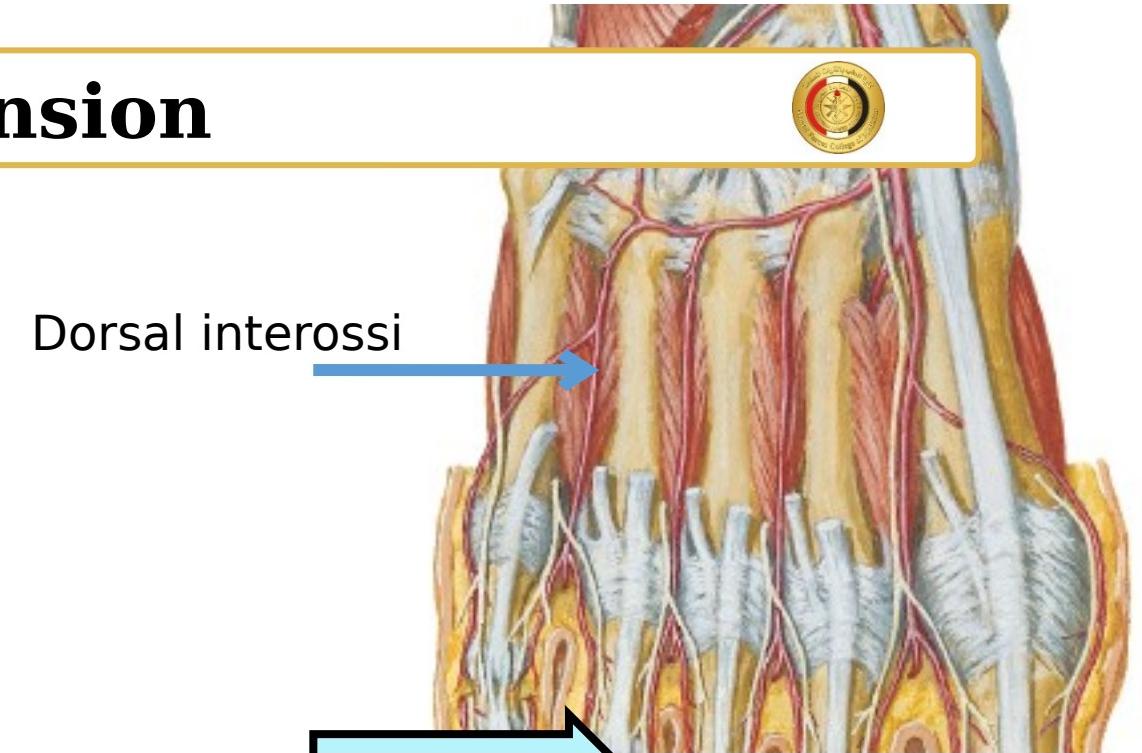
## **Extensor expansion of the toes:**

Union of the tendons of extensor digitorum longus & brevis to form expansions for the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> toes on the dorsum of proximal phalanges

# Extensor expansion

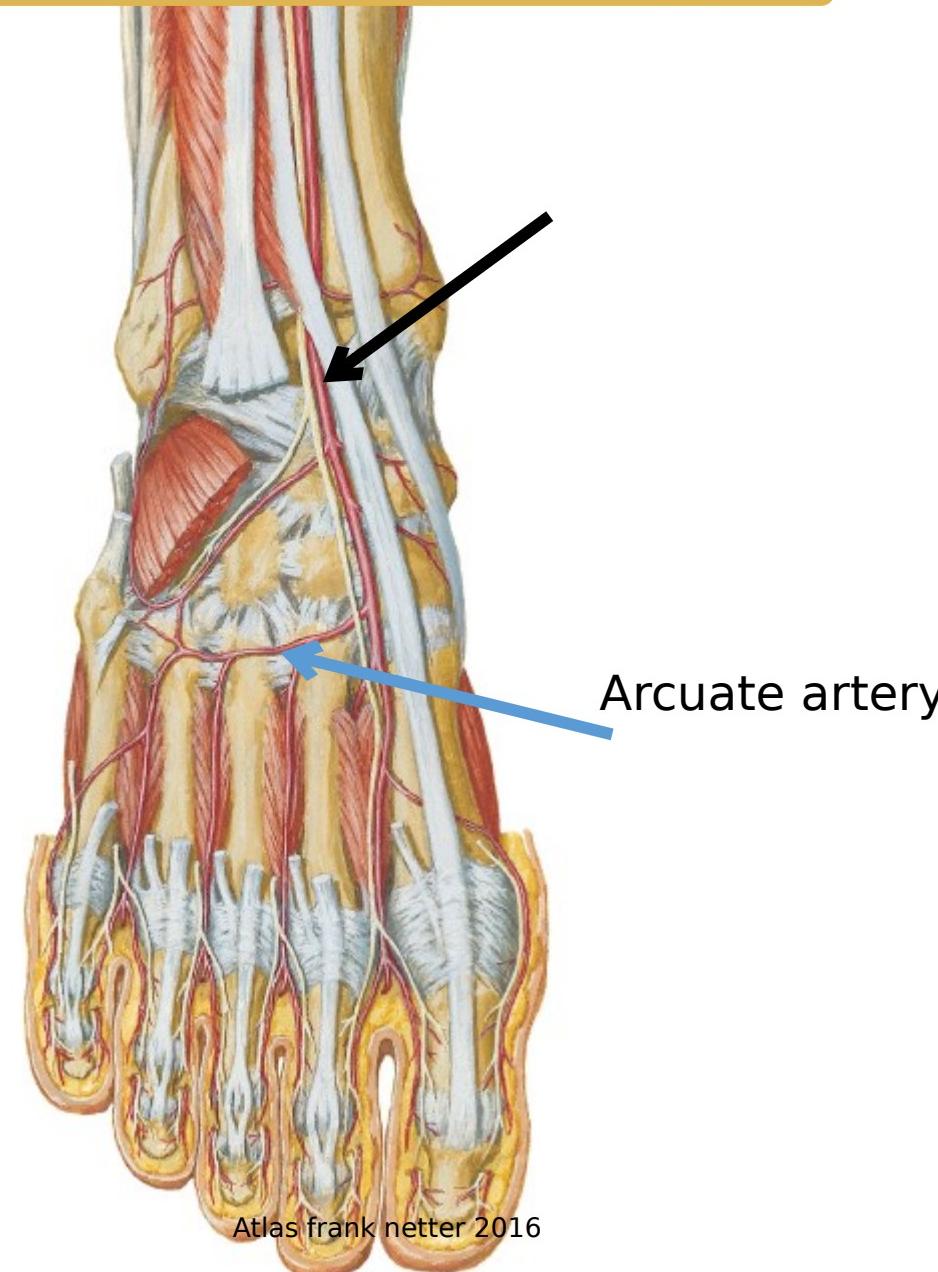
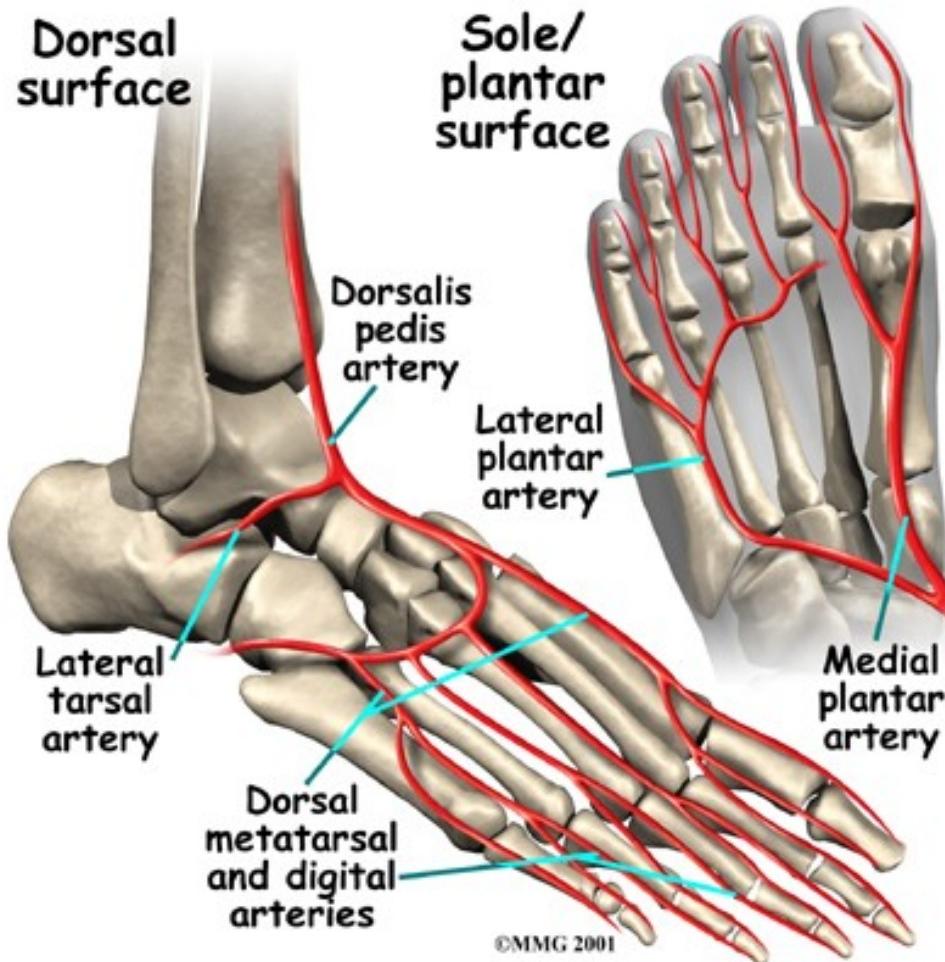
Each expansion is joined by one lumbrical and **2 interossei** muscles which pass across the sides of the metatarsophalangeal joints from the sole of the foot.

Each expansion a pro interphalangeal joint into **3 slips**; the **inter** attached to the base middle phalanx and the **collaterals** reunite or of the middle phalanx attached to the base distal phalanx





# Dorsalis pedis artery





# Dorsalis pedis artery

**It is the continuation of the anterior tibial**

## Surface anatomy:

**The pulsation of the dorsalis pedis artery is palpable from the midpoint between the 2 malleoli to the proximal end of the 1st intermetatarsal**

**Course & Termination:**  
**Medial : tendon of extensor hallucis longus**

**Lateral : terminal branch of deep peroneal nerve**

**It passes between the 2 heads of the 1st dorsal interosseous muscle at the proximal end of the 1st intermetatarsal space into the sole of the foot where it completes the plantar arch.**



## Branches

- A- lateral tarsal
- B- Medial tarsal
- C- first dorsal metatarsal
- D- arcuate artery : at base of metatarsal bones gives 2, 3, 4 dorsal metatarsal arteries and gives dorsal digital arteries

# Lecture Quiz



Question 1 A patient lost the ability to evert his foot the lesion affected which of the following muscles

- a) Tibialis anterior
- b) Peroneus longus
- c) extensor hallucis

Question 2

Compare branches of anterior tibial nerve and superficial peroneal nerve

Question 3

Which muscles share in formation of extensor retinaculum

# **SUGGESTED TEXTBOOKS**



1. (Regional anatomy by Richard snell 9<sup>th</sup> edition )